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GENERAL ELECTRIC

TELEPHONY

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First Aid COURSE FOR EMPLOYES

By **LLOYD C. JENKINS**
American Red Cross Instructor
Lincoln (Neb.) Telephone & Telegraph Co.

PART IV. The fourth of five principles of First Aid—fractures—is explained by Mr. Jenkins in this installment. For a complete list of principles refer to page 13 of the January 9 issue in which was published Part I in this series on First Aid. Part III appeared February 6.

THERE ARE over 200 bones in the body that can be broken and crushed. According to statistics furnished by the National Safety Council, falls cause a great many broken bones in our homes and industries. A great many of these falls are caused by improper housekeeping. The leaving of aisles full of waste materials or the storing of materials in the aisles and on stairways are traps that cause people to trip, stumble, and in many cases fall. Good housekeeping not only reduces accident hazards; it improves the morale of the workers and promotes safety. Good housekeeping means an orderly arrangement, with attention given particularly to cleanliness and to safety.

Another cause of broken bones is using such things as frail boxes, crates and barrels for ladders. All insecure footings should be repaired. Railings should be placed on stairways and all stairways should be properly lit with illuminating paint, as well as with good lights, in order to avoid some of the dangers of falling while ascending and descending stairs.

Other causes of broken bones are the automobile accidents that occur on the public highways of America. Hundreds of people receive broken backs, broken pelvic bones, broken legs and arms annually in automobile collisions and automobile mishaps.

Simple Fractures vs. Compound Fractures

When an accident happens and a bone is broken, the injury is called a fracture. For practical purposes, there are two kinds of fractures, a simple fracture and a compound fracture. In a simple fracture the bone is merely broken and does not protrude through to the surface of the skin. Now this bone may be broken in numerous places and it will still be called a simple fracture, as long as there remains no connecting wound.

When the bone is broken and, in addition to this break there is a wound from the surface of the skin to the break in the bone, a compound fracture is developed.

In a compound fracture, aside from an open wound leading to the fracture, there may be severe venous or arterial bleeding and the white end of the bone may be seen showing through the skin. If there is severe bleeding, it is necessary to first stop that as stoppage of the flow of blood takes precedence over everything else. A compound fracture is doubly serious due to the dangers of deep infection in the wound or in the bone itself.

A compound fracture may be caused by improper handling of a simple fracture. We know that the ends of

PHOTOGRAPH I. Leg traction being placed. HERMAN STUDIER (right) and CHAS. RIEDEL starting to place a traction splint. MR. STUDIER will hold traction until splint has been completely placed.

a broken bone are often very sharp and the danger of making a compound fracture out of a simple fracture through improper handling is one of the important points to guard against in first aid. The importance of proper handling of a simple fracture to prevent further damage should be emphasized over and over throughout any course of first aid instruction.

If there is any doubt as to whether a bone is fractured, always care for it as a fracture. Never move a victim who may have a bone fracture until a splint supports the suspected broken bone. The duty of a first aider is to make the victim as comfortable as possible and to care for any shock that may be present. This can be accomplished by keeping the victim lying down, keeping him warm and giving stimulants if needed, and securing the services of a doctor.

If it is necessary to move the victim before the doctor arrives, the first aider must prepare the injured worker for transportation. The first aider, of course, should make no attempt to set a bone but he must apply proper splints to all fractured bones before the victim is moved, even for a very short distance.

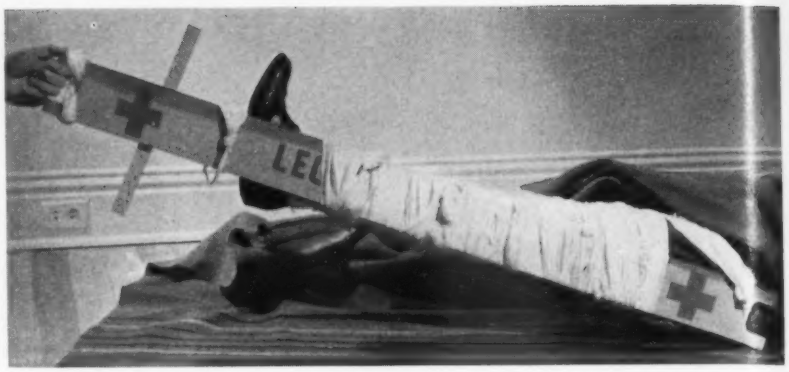
Simple Fractures

If the victim is suffering from a simple fracture, he will have severe pain and tenderness at the point of fracture. There will be inability to use the broken part, and the member may be altered in shape or shortened. By comparison of the injured part with the uninjured, this deformity usually can be noted and the inequality may often be felt by running the finger carefully along the broken bone. When doing this be very careful not to aggravate the injury.

Many times the injured person may have heard the bone break or may feel grating at the point of the break and so inform the first aider. This is revealing evidence and the first aider may be guided by it. Shock will be present in a more or less degree in all cases of fracture.

Compound Fractures

In compound fractures all of the symptoms just mentioned under "Simple Fractures" will be present. In addition, there will be the wound and bleeding, and the end of the bone may or may not protrude through the skin. The wound will be severe and there will be much swelling at the point of fracture. This wound can either be made by the sharp ends of the bone or by some outside object that causes the wound and breaks the bone at the same time.



PHOTOGRAPH II. Leg traction splint completed. Patient ready for transportation.

Care of Simple Fractures

When a bone is broken and it is found to be only a simple fracture, it is the duty of a first aider to protect this bone and keep it from becoming a compound fracture. To do this, keep the victim quiet and lying down, prevent all movement of ends of bone or of injured member, and send for a doctor at once. If the doctor can come in a short time, do not remove clothing from the injured part unless there is evidence of bleeding. If it is necessary to remove clothing from a fractured member, cut or rip the seam and lay the clothing back, exposing the injured part.

If the patient must be moved before the doctor can reach him or must wait over an hour for the doctor, splint the injured part. The object of splinting a simple fracture is to hold the injured member carefully on both sides of the break to prevent movement of the ends of the bone in the flesh. In splinting, it is essential to splint beyond the joint, or joints adjacent to the fracture, so that the whole part will be rendered immobile.

PHOTOGRAPH III. Putting a traction splint on the arm. MR. STUDIER (right) is holding traction while MR. RIEDEL ties traction hitch over the end of the board. Note the pressure of the traction loop in the arm pit has not been removed.

Care of Compound Fractures

If a compound fracture is recognized, there will be a connecting wound to care for aside from the broken bone itself. If there is severe bleeding, it must be quickly controlled. First, gently remove the clothing from the injured part. If the bone projects through the skin, paint the exposed end of the bone and the wound with a 2 per cent tincture of iodine, being extremely careful not to touch the wound with fingers or other objects not surgically clean. Place a sterile compress over the wound and bandage loosely in place.

It is desirable in the care of a compound fracture that use of the traction splint is made. The information given the doctor when he is summoned should include the statement that the fracture is compound.

Traction Splint Where Possible

Perhaps the best splint used today in the first aid care of fractures is the traction splint. When a large bone of our limbs is broken, a great muscular contraction takes place. The muscles which have been held firmly in place for years have their support—which is the bone—broken from under them. Consequently, these muscles begin to contract and it is this contraction which causes the victim much of the intense pain he suffers.

The purpose of the traction splint is to produce a firm, steady pull on the muscles, pulling them back into place and at the same time pulling the bone ends apart, rendering it impossible for the sharp ends of the bone to do further damage to the muscles and tissues surrounding the bone. The bone ends are separated, in this manner, and drawn into approximate

alignment, thus preventing further laceration of soft tissue.

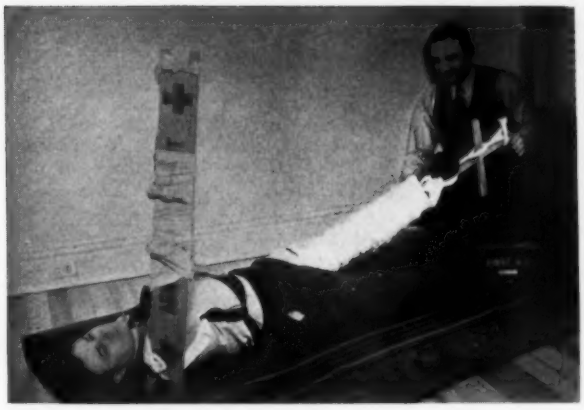
On page 144 of the American Red Cross First Aid Textbook is a discussion of a variety of traction splints. Particularly is the Thomas splint shown. It is not probable that the majority of first aiders will have on hand these mechanical splints so it is necessary for the first aider to improvise fixed traction splints.

Fixed traction splints can be improvised from different sources—such as the use of broom handles, mop sticks, steel fence posts, pike poles, long-handled shovels, or, in perhaps the majority of the cases, a traction splint may be improvised from a board about four inches wide and one-half inch thick. A V-shaped notch can be cut in each end of this board. If such a board is used for fractures of the leg, it should be long enough to reach from a foot above the hip to a foot below the heel.

Fractures of the Leg

In *Photograph I* accompanying this article, I have demonstrated the application of the traction splint on a victim suffering from a broken limb. You will notice that a wide cravat is tied fairly snug around the leg just below the groin. It is important for this cravat to be wide because if it is too narrow it will produce a cutting effect. This loop serves as a hitch for the top of the notched board. The notched board has a cravat bandage lock hitched over the end, leaving two long ends protruding that are tied into the sprained ankle bandage which has been placed on the victim.

PHOTOGRAPH IV. Completed traction for the arm. Note how the pressure is relieved from the armpit. This method not only relieves pressure in the armpit but it also tightens the traction.



PHOTOGRAPH V. Completed traction splints on the arm and leg. Patient is ready for transportation which can be done without further injury.

While this work is being done, you will note (in *Photograph I*) that traction is being held on the victim's leg. This traction must be held until after the job of placing the splint is completed. After the splint is in place, *the heel should not be allowed to rest on the ground*, but the end of the splint should be supported by something.

The amount of traction that is placed on the leg varies, of course, with the size of the muscles of the victim. In most cases, approximately from seven to ten pounds' pull is sufficient. Before you allow your assistant to release his traction pull on the leg, a short stick should be inserted between the traction bandages below the foot and twisted until sufficient pull is obtained.

In addition, there should be, *first*, a wide triangular bandage wrapped twice around the leg just above the ankle. The *next* triangular bandage should be placed over the knee; *then* there should be one placed below the knee and *one above*, and *one* just below the crotch—making a total of five wide cravats used as a cradle for the injured leg, see *Photograph II*. The total material needed for such a splint is: one four-inch board approximately 56 inches long, eight triangular bandages, and one small stick from four to eight inches long, to be used to assist traction. The method of splinting a simple or compound fracture may be the same.

Fractures of the Arm

Fractures of the arms are similarly cared for by using boards with notches cut in each end, *Photograph III*. The board should reach a foot above the shoulder and about a foot below the hand. A cravat loop should be placed under the armpit and a triangular bandage with a small four-inch long stick, rolled in the center to form a rolled cravat, is placed across the palm of the hand, and the fingers and thumb should be closed tightly around the bandage and stick, leaving the loose ends projecting on each side. This is well illustrated on Page 152 of the American Red Cross First Aid Textbook.

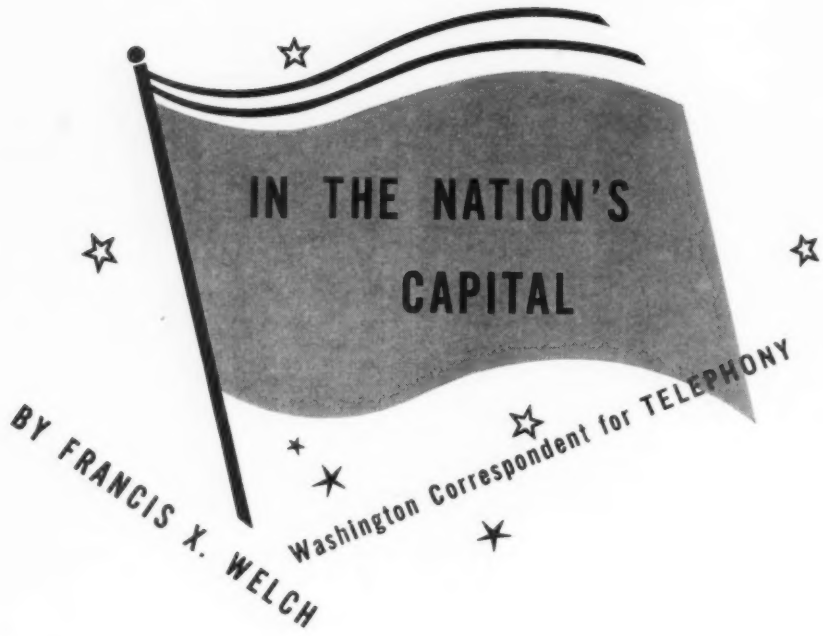
As shown in Photograph III, these loose ends serve as the traction hitch. A second cravat is wrapped around the fist, as shown, to prevent the fingers from opening. This second bandage is the same as that used for the closed fist. In applying traction, you will notice the picture shows that Mr. Studier has gripped the wrist of the victim and is exerting a steady pull, while Mr. Riedel is running the ends of the bandage or traction hitch over the end of the traction splint and about to make the tie.

Pressure is taken from the arm pit (*Photograph IV*) by running a cravat around the waist and tying with a square knot, leaving one long end to insert through the loop under the arm, then pulling it down, thus relieving pressure. Similarly, as in the traction for the leg, the arm is wrapped with wide cravats after the splint has been placed, *Photograph V*.

On Page 156 of the American Red Cross textbook is a good illustration of the traction splint of the arm, in which a limb from a tree is used. Limbs that have notches in them are easily improvised for use as a traction splint. Traction splints are not difficult to apply and should be the first choice of a first aider. As a usual thing, the use of this splint results in the more rapid recovery of the victim and hastens his return to his work.

It has been proven by industrial groups that the proper handling of fractures, whether simple or compound, at the scene of accident reduces lost time and the cost of accidents. It is a fact that during World War I, the death rate of our soldiers with leg fractures was as high as 75 per cent. This was due to increased bleeding and added shock caused by the fracture damage being greatly aggravated when, without splinting the injury, the

(*Please turn to page 29*)



New Senate bill introduced in Congress which would divide FCC into two autonomous branches — one for radio and one for common carriers, including telephone industry. . . . Suggestions as to procedure of filing PD-1-A forms with WPB. . . . Report of National Resources Planning Board reviewed....FCC committee to oversee telegraph merger.

THE chances of favorable congressional action on proposals to rewrite the Communications Act and reorganize the Federal Communications Commission have improved. The phrase "congressional action" rather than "congressional enactment" is used advisedly. The reason is this: Even if both houses of Congress should approve the pending "ripper" legislation to tear up the FCC and rewrite the Communications Act, it is quite likely that President Roosevelt would veto the same. And it seems almost inconceivable that sufficient support for such legislation could be mustered in both branches of Congress to override a presidential veto.

Let us cross such bridges when we get to them. Thus far, the "ripper" bills have not even gotten out of committee and onto the floor of either chamber. So we shall have plenty of time to talk about possible passage and veto prospects if, as, and when the bills reach that stage.

But the chances have improved, as stated above, with the introduction of the White-Wheeler bill (S. 814) in the Senate (see page 22 of this issue for item on S. 814). The White-Wheeler bill is not exactly a companion of the Holmes bill (H.R. 1490) introduced earlier in this session and previously reported in this department. But both bills are roughly parallel and cover about the same ground.

As long as Representative Holmes—a Massachusetts Republican—was trying to fight this battle alone, your correspondent was inclined to write it off as a flash in the pan. He thought it was just another Republican minority bill introduced more for effect than for any expectation of actual progress.

But now that the Holmes bill has been joined in the upper chamber by the White-Wheeler bill, the thing has taken on a different aspect. Senator White of Maine is a Republican but he is also the acknowledged communications expert of the entire Congress. Senator Wheeler of Montana is a Democrat—and while he is not exactly a New Deal Democrat, he is chairman of the Interstate Commerce Committee to which the White-Wheeler bill has been referred, thereby insuring prompt consideration.

And so, it would appear that there is a certain amount of bi-partisan support behind this legislation which in a very small nutshell would do the following things: The bill would divide the FCC into two autonomous branches—one for radio broadcasting, the other for "common carriers" (such as telephone and telegraph companies). Each branch would have three members. The seventh member of the commission—the chairman—would be reduced to the status of an executive officer. Further, the bill would spell out the FCC's authority over various controversial issues involving regulatory policy.

Much depends, of course, on just how much critical evidence will be developed

against the FCC (as presently organized) by two investigating committees of the House of Representatives, now working on the subject. One is the special committee headed by Representative Cox of Georgia and authorized to investigate the FCC. The other is the so-called "anti-bureaucracy" committee headed by Representative Smith of Virginia, which will examine alleged bureaucratic abuses of all government departments and agencies—or, at least, any of them concerning which evidence can be collected. The FCC is known to be on Representative Smith's list of agencies to be inspected.

A good many Washington observers are inclined to think that neither Representative Smith nor Representative Cox is going to turn up very much in the way of real "dirt" on the FCC. A few are inclined to believe that Cox and Smith really have something and will blow the roof off the FCC when the time comes for playing their cards. Your correspondent, not having followed too closely radio broadcasting matters (which is what all the shooting seems to be about), is quite frankly on the fence. Right now, he will only say this much: If these investigations really turn up a scandalizing condition within the FCC, there is a real chance for approval of some sort of Holmes-White-Wheeler legislation at the current session.

Furthermore, under such circumstances, even President Roosevelt might well be constrained to sign his name to the present FCC's death warrant. After all, it hasn't been so many years since the President himself, aggravated by continual wrangling within the FCC, suggested a streamlined reorganization formula of his own. At present, however, the President is reported to believe that we are much too busy with more important things to bother with such a fair-weather job as overhauling the FCC. He might *not* feel that way about it, if evidence were forthcoming that the FCC is really in a dangerous state of disrepair. So, let us leave it at that until further progress is made on these bills.

* * *

There has been considerable backing and filling within the War Production Board over the recent regulation authorizing the processing of PD-1-A applications for priorities in the field offices of WPB instead of sending them to Washington. By its terms this regulation is general. It purported to apply to all PD-1-A applications, whether for a utility project or for any other type of industrial enterprise.

The regulation was issued by the WPB Director of Operations at a time when the Office of War Utilities was just being set up and organized and when the Office of the Director of Operations was itself being reorganized (since then that office has been abolished and its functions transferred elsewhere).

There was some resulting confusion when the Office of War Utilities (OWU) found out about this general regulation. The director of the power division felt that, as a general rule, electric utility company applications for PD-1-A projects were too technical to be processed in the field. The director of the communications division was said to have concurred in this view, as did the director of the gas division and the director of the waterworks division.

This led to an unofficial report (on apparently good authority) to the effect that utilities would *still* have to send their PD-1-A applications into Washington for processing — regardless of what other applicants might do with their PD-1-A applications. At this writing, the confusion has not yet been entirely removed, but it has been clarified to some extent. You can be sure of this much, at least: If your PD-1-A application is for a project amounting to less than $100, it is quite all right to send it to your regional WPB office for authorization instead of sending it to Washington.

It is expected that pretty soon this limit may be raised to $500 and even higher. But if your PD-1-A application is for a project that will cost over $500, it would be well to play safe—until further notice at least—and send it to Washington instead of the regional WPB office. It is hoped and expected that the OWU will be able to clear a special regulation for all utilities in the near future that will clarify this situation.

As a matter of fact, much of the usefulness of PD-1-A applications will be eliminated when the telephone industry gets its expected new priority rating of AA-1 under the forthcoming revision of repair and maintenance order P-130. That is because most of the PD-1-A applications, now going through the mill, are simply attempts to gain higher priority ratings for repair and maintenance materials which companies find themselves unable to obtain under the old inferior blanket rating.

It is also expected that PD-1-A applications will no longer be permitted to vary the limitations imposed by L-50. In the past, authorization of PD-1-A applications has been used as an exemption from limitations which would otherwise be imposed under L-50. In fact, the Telephone Operations Industry Committee, at its recent meeting in Washington, just about decided to remove such exemptions from PD-1-A applications in the forthcoming revision of L-50. The committee also considered the amount (by pounds)

OUTLINE OF PROPOSED CHANGES IN WPB L-50

Several important changes in the War Production Board's limitation order L-50 were recommended at the regular meeting of the WPB Telephone Operations Industry Committee held March 10 in Washington. Informed sources state that the discussions at the meeting centered around the critical problem facing the telephone industry in meeting the present, ever-increasing demand for telephone service with a meager stock of telephone instruments, which faces depletion in a few months at the present rate of new installations.

It is understood that the committee generally discussed the advisability of additional limitations under a forthcoming revision of L-50 chiefly designed to attain the central objective of making the available stocks of telephone sets stretch as far as possible. Among the factors considered were:

(1) Limitations on the subscriber load with respect to call capacity of central office facilities.
(2) Placing subscribers on an interim basis.
(3) Prohibition of further installation of PBX dial equipment.
(4) Further limiting the use of drop wire.
(5) Increases in steel wire for extending service to rural food producing subscribers.
(6) Permission to place cable terminals to conserve copper.

No final decision, of course, was reached at the meeting since that is subject to the exclusive discretion of the communications division of the Office of War Utilities.

that should be allowed in extensions, spans, connections, etc. But information on these details will have to await the actual revision of the order.

* * *

Last week President Roosevelt sent to Congress with his blessing the long-awaited report of the National Resources Planning Board. This was in two volumes. The first dealt with social security, the second with post-war transition of our nation's economy from war to peace.

You have probably already read in your newspapers about the main features of the social security program, or so-called "cradle-to-the-grave" plan for making everybody happy and contented with life in the brave new world. But you may not have read about certain passages in the post-war planning report which indicate a very surprising attitude on the part of the National Resources Planning Board toward a number of essential industries, including our own telephone industry.

In a section of the report on "Promotion of Free Enterprise," the board suggested a technological research program fostered by the federal government "to promote the welfare of the nation by helping the progress of its industries, to raise the standard of living by increasing the quantity and quality of goods available for distribution, to conserve scarce and strategic resources in the nation by developing substitutes or more efficient methods, and to discover uses for available resources which have been entirely or partly neglected by private enterprise."

The board's proposal for a combination of governmental and private capital in industry on a general scale is considered by your correspondent to be the feature of the report most likely to stir debate and opposition in Congress. Concerning this problem the board said that in some sectors of the economy, public interest may be served better by the use of mixed corporations than by either wholly private enterprise or outright government ownership and operation. A variety of arrangements is possible depending mainly on the relative extent of government participation. Here is the language of the report:

On the one hand the government's proportionate investment in the corporation might be so great that the corporation would be operated essentially as a public enterprise. On the other hand, private stockholders might own a majority interest and government representation be concerned solely with matters relating to public policy.

In any case the structure of a mixed corporation and the special authority delegated to government directors can be made to vary with the functions of the corporation, and with the need for promoting the public interest.

The report cited certain outstanding examples of mixed corporations in Great Britain and its dominions and said that in the post-war period the mixed corporation might be an effective form of organization for certain plants in those industries of critical importance in war time and in which the government has made war-time investments. The report continued:

Through the mixed corporation, government could participate in the selection of the areas and the business units which are to continue to operate in these industries.

Moreover, government representatives could check the degree to which public assistance to these industries in the form of contracts or special subsidies was being used to develop improved products and to reduce costs.

Other fields in which this type of joint enterprise could be used for new operating units are urban redevelopment, housing, transport terminal reorganization, air transport, *communications*, and electric power (Italics supplied).

It is noteworthy that the so-called "mixed corporation" is a European importation which, notwithstanding the exclusively British references contained in the National Resources Planning Board's report, reached its fullest flower in pre-war Axis countries, notably Germany. In 1930 almost a fifth of all electric utility establishments in the Reich were operated by mixed corporations as against 340 operated under public ownership and 181 under private ownership. Mixed ownership was even more noticeable in the operation of waterworks and local transit systems in pre-war Germany. It had a tendency to gravitate toward public ownership and in effect resulted in eventual outright state ownership and operation of the German railroad system in which, originally, private capital had been allowed to participate.

* * *

The appointment of a committee of three members of the Federal Communications Commission and a staff of experts was announced by Chairman Fly on March 9 to keep informed in connection with the prospective merger of the Western Union Telegraph Co. and Postal Telegraph, Inc. (On the preceding day President Roosevelt had signed into law the measure which permits consolidation of the two companies.) The FCC explained that it wishes "to be currently informed on the progress of any negotiations by the two companies."

The special committee, headed by Commissioner George Henry Payne, includes Ray C. Wakefield, and Clifford J. Durr. It will have a staff headed by William J. Norfleet, chief accountant, and including Manfred K. Toeppen of the FCC engineering department, Benedict P. Cottone of the law department, and Dallas Smythe, chief economist.

15,000 EXTRA COPIES OF SIGNAL CORPS ISSUE PRINTED

Through the cooperation of the advertisers in TELEPHONY'S Special Signal Corps Issue, which was published November 28, 1942, more than 15,000 additional copies of this issue were printed and sent to the Signal Corps in Washington for distribution to its various schools and posts throughout the United States.

To make this reprinting possible, a sufficient number of advertisers authorized the reproduction of their advertisements to cover the reproduction costs. TELEPHONY and the industry as a whole are indebted to the manufacturers and suppliers for this cooperation in disseminating valuable and useful information to members of the communications branch of the U. S. Army.

The additional copies were shipped to points designated by the Signal Corps a few days ago and by this time they probably are in the hands of the men who must construct and maintain communication facilities for our armed forces.

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ELECTRICAL ENGINEERS, DESIGNERS AND CONSULTANTS

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Can You Use Any of These Services?

1. **Advertising Service**—a specialized, no-cost advertising service to help you dispose of surplus inventory or to obtain material from surplus stocks of other companies — including telephones which may not be available from your supplier.

2. **Engineering Consultation** — to help you adapt your equipment to changing traffic conditions.

3. **Maintenance Suggestions** — to keep your equipment at top operating efficiency.

4. **"Rebuild and Return" Service**—save critical materials and help keep your old apparatus working.

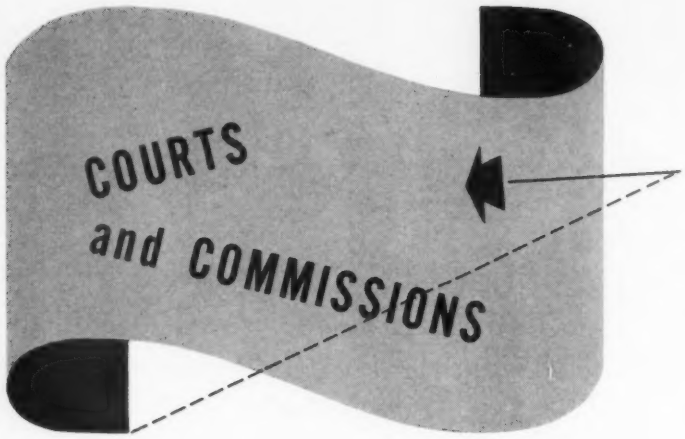
5. **Operating Advice** — our operating engineers are available for consultation on operating problems.

6. **Educational Material**—a wide variety of technical bulletins are at your disposal for employee training.

7. **Emergency Equipment** — if disaster strikes, ask us to help you obtain temporary facilities.

8. **Civilian Defense**—we will gladly suggest methods for meeting telephone needs during air raids and blackouts.

9. **Our Service Men** — there is one in your neighborhood. Call on him for advice or help when you need it.



Senate Bill to Revise Communications Act

Chances of congressional action to revise the Communications Act improved somewhat with the introduction of a Senate bill to separate the FCC into two independent divisions of three members each — one for radio broadcasting, television and other "public communications"; the other branch would control "common carriers," including telephone, telegraph, cables, etc.

The bill resembles in many respects the Holmes bill introduced earlier in the lower house. It diminishes the importance of the FCC chairmanship to the status of an "executive officer" or "coordinator." It would spell out the jurisdictional authority of the commission over various controversial policy-making issues involving radio regulation, such as the "newspaper ownership" problem.

The fact that the co-authors of the bill are Democratic Senator Wheeler of Montana, chairman of the powerful Senate Committee on Interstate Commerce (to which the bill was referred), and Republican Senator White of Maine (acknowledged communications expert of the U. S. Senate) would indicate that there is considerable bipartisan support behind some form of Wheeler-White-Holmes legislation.

Much depends on the outcome of the special House committee investigation of the FCC now being organized for early action by its chairman, Representative Cox of Georgia. Any such legislation rests under the shadow of a possible presidential veto.

V V

Labor Board Order Validity Studied by Supreme Court

The validity of a labor board order directing the Southern Bell Telephone & Telegraph Co. to disestablish a union of company employes in nine southern states was an issue March 8 in arguments before the United States Supreme Court.

Robert B. Watts, general counsel of the board, asserted that the organization—the Southern Association of Bell Telephone Employes—"was a revision of an admittedly company-dominated union which was never disestablished."

Marion Smith, Atlanta (Ga.) attorney for the company, contended the board's order was "based upon a finding of domination and interference on the part of the company which is not supported by substantial evidence, but is contradicted by undisputed evidence."

James A. Branch, Atlanta attorney for the association, said the union had been chosen by at least 85 per cent of the eligible employes as the bargaining representative of the 20,000 or more workmen.

The fifth federal circuit court refused to enforce the order, saying it had found no case "where the record is so completely lacking in any evidence of anti-union activities and anti-union bias on the part of the employer."

Charges that the company dominated the association were filed with the board by the International Brotherhood of Electrical Workers connected with the A. F. of L.

Among the states involved in the Southern Bell case are Mississippi, Louisiana, Tennessee and Kentucky.

V V

Nebraska Legislature Postpones Compensation Insurance Bill

The labor committee of the Nebraska legislature has voted to indefinitely postpone a bill creating a state bureau to make all rates for workmen compensation insurance in Nebraska and requiring companies to adhere to the schedules. Majority members of the committee were of the opinion that because of existing conditions in the labor field it would be well to postpone any attempt to control rates in the state. They were also unconvinced that present charges by the companies were out of line, and preferred to wait until experience had been had with the increased awards in a bill previously reported by the committee. This increases maximum weekly disability awards from $15 to $17 and payments for life from $10 to $12.

The committee also killed a bill which would have extended the benefits of workmen compensation to cover cases where occupational diseases cause disability or death where these arise out of or in the course of employment.

Also cancelled was a bill which redefined the qualifications and disqualifications for those entitled to receive benefits under the placement and unemployment insurance law.

Reported out for passage was a bill revising the procedure in cases brought before the state compensation court, the principal one being elimination of a provision giving a worker or insurance carrier the right of appeal from the decision of one judge to the entire court. Appeals will be taken direct to the district court.

V V

Bill Proposes Telephone Tax Income Go Direct to Towns

A measure designed to distribute tax income from telephone and telegraph companies to local communities instead of being paid into the state general revenue fund was introduced March 4 in the Minnesota Senate in Minneapolis by Senator Homer Carr, Proctor.

Under the terms of the proposed leg-

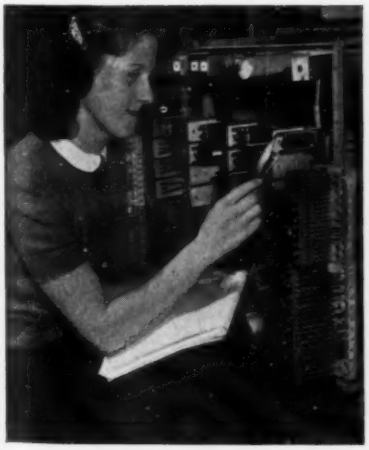
(Please turn to page 34)

Womanpower meets war-time challenge

HANDLING FRENCH CURVES and compasses in the engineering office—or operating a heavy duty drill press in the plant—Western Electric women help to keep production flowing.

OXYACETYLENE WELDING used to be considered a man's job before the war—but girls are doing much of it now.

EXACTING SPECIFICATIONS to be met on war contracts? Girl inspectors test and check output with scrupulous care.



ADJUSTING RELAYS in central office equipment—and transporting reels of cable on a 15-ton crane—are jobs that women now handle with equal skill.

WOMANPOWER at Western Electric—nearly tripled since Pearl Harbor—is carrying on in splendid fashion for our 17,000 employees now serving in the armed forces.

Though women have long played a big part in making telephones, switchboards and cable, you'll find them today doing many kinds of work done in normal times by men only.

These feminine soldiers of production are doing a man-sized job—helping to meet record war-time needs for communications apparatus.

Western Electric

IN WAR . . . ARSENAL OF COMMUNICATIONS EQUIPMENT.
IN PEACE . . . SOURCE OF SUPPLY FOR THE BELL SYSTEM.

by MAYME WORKMAN
traffic supervisor
the Illinois Telephone Association
and traffic editor

THE OPERATOR'S CORNER

INFORMATION service is provided to furnish telephone numbers for use in making calls. Telephone subscribers are furnished a directory when subscribing for service. It is intended that the directory will be used in securing numbers listed therein and that the subscriber will call Information for those he cannot find.

The records used in rendering information service should be adapted to meet local requirements efficiently. Up-to-date alphabetical records for the local exchange area should always be maintained. Other reference material should be provided as it becomes evident that the expense involved in its preparation is warranted from the standpoint of operating efficiency and service.

Information operating practices are designed primarily to render a comprehensive and satisfactory service to telephone users who require assistance in securing telephone numbers. Extensive latitude in phraseology is employed to permit the flexibility of personal conversation.

Information operating differs from the work of the local operator, for example, in that the communication between the Information operator and the customer is more of a conversational than an order-giving nature.

The Information operator has an excellent opportunity to demonstrate her company's willingness to help the customer by cultivating an easy, natural and personal manner in her contacts with the customer.

Phrases should be direct and personal rather than impersonal and formal. Personal pronouns should be used wherever their use is natural, as, "I don't find that listed," rather than, "There is no telephone listed," or, "Can I help you?" instead of "What information do you wish, please?"

Replies and questions should be specific, direct, and to the point. If the customer has said, "Do you have a telephone for John Brown?" answering "I'll see," seems more direct and personal than "Thank you" or "One moment, please."

Phrases should be as short as possible to convey the idea you wish to express. Unnecessary words should be omitted so that the essential details stand out more clearly and the customer's attention is not distracted from the main thought. In general, specific details only should be repeated when you wish to verify or emphasize them, or when they fit in naturally with your report. For example, "Do you want the information bureau or the ticket office?" sounds more natural than "There are several telephones listed for the A & B Railroad. Which one do you wish, please?"

"Thank you," "Please," and "I'm sorry" should not be overworked as doing so gives the impression of studied formality rather than friendly, personal communication. These expressions have their place and should be used as in ordinary conversation.

"Please" applies when you ask the other person to do something, as "Will you spell the name, please?" but not when you ask directly, "How do you spell the name?"

"Thank you" applies where the other person has done something you have specifically requested. In general, "Thank you" at the end of a series of questions is sufficient. For example, after: "Do you know the initials?" "Do you know the address?" "What number on Main?" "Thank you."

"I'm sorry" is apt to be cheapened by over-use. Ordinarily, it should not be used in giving a preliminary report but it may be used in giving a final report or when a customer accepts your preliminary "no listing" report. "I'm sorry" in this case seems a rather personal way of terminating the contact. The phrase "I'm sorry" should be used when the customer reports some irregularity, or if you discover that through a misunderstanding you have been attempting to report on a wrong listing. In this case the phrase has real meaning.

The customer is not able to supply the desired listing in every instance, that is, the name under which the telephone is listed. This is indicated in question No. 5: "How should a call be handled when the subscriber asks for a particular person and the telephone is listed in another name?" In this case the operator must depend upon the customer's statement of details to indicate that party. It frequently becomes a matter of judgment on the part of the Information operator to decide from the details given and the listings that are found, or known, whether a listing is "obviously the desired listing" or whether it should be suggested as being possibly the desired listing.

If a listing is materially different from the request but you are sure it is the desired number, give the number preceded by a brief qualifying statement as to how it is listed if it appears that this would aid the customer to find it himself in the future, as for example: On a request for the Weather Bureau, you might say, "That's listed under the United States Government. The number is 578." Another example, a party asks for "Mrs. Haggerty's Dress Shop" and the telephone is listed as "Women's Smart Shop."

Questions from Illinois Operators

1. How long should a tributary operator hold a trunk and a calling party's line when the long distance operator requests you to do so?

2. If you receive a supervisory signal on the cord on which you are holding a calling party's line for long distance, what should you do?

3. When you are holding a calling line for long distance and you receive a call over another trunk for this line, what action should be taken?

4. When a ticket is passed collect to a toll center from a tributary office, should the toll center operator repeat "ok collect" when she is ready on the call?

5. How should a call be handled when the subscriber asks for a particular person and the telephone is listed in another name?

The answers to these traffic questions are presented on page 32.

V V

United Utilities, Inc., Elects Directors and Officers

At the annual meeting of the stockholders of the United Utilities, Inc., Abilene, Kan., held on March 8, the following directors were elected: William Ritchie (chairman), Omaha, Neb.; Alden L. Hart, Abilene; Ralph W. Dockstader, Beloit, Kan.; Richard Robbins, Belvidere, Kan.; Harry Darby, Kansas City, Kan.; R. C. Kemper, Kansas City, Mo. and Clyde L. Paul, Philadelphia, Pa.

The directors in turn appointed the following officers: President, Alden L. Hart; vice president, Ralph W. Dockstader; vice president, treasurer, and assistant secretary, C. A. Scupin; secretary and assistant treasurer, O. D. Small; general auditor, E. E. Anderson, and general counsel, B. I. Litowich.

Best Story of the Week — What's Yours?

There wasn't a known enemy of the United States Marines on an island somewhere in the South Pacific, which made it difficult to understand who was cutting the telephone wires the Signal Corps had strung through the jungles.

Then Corp. Paul Fredericks of Naugatuck, Conn., and Pvt. Lawrence Volovski of Thomaston, Conn., noticed that many native stringed instruments had new wire strings. The villagers readily admitted they had cut the wires, using them for clothes lines as well as the musical instruments. They hadn't figured the Marines would miss such small bits from such long lines.

YOU GET

FULL PROTECTION AT EVERY POINT

SANDS TYPE 15 SUBSTATION PROTECTOR
SANDS TYPE 20 SUBSTATION PROTECTOR
SANDS TYPE 35 PROTECTED CABLE TERMINALS
SANDS TYPE 40 PROTECTED CABLE TERMINALS

with

SANDS

PROTECTIVE APPARATUS

Not only are Sands protective devices built to give you a wider range of protection throughout your plant but Sands equipment also gives you a greater measure of protection at each specific danger point. This is because Sands substation protectors and protected cable terminals are engineered to offer maximum protection against dangerous forces. For example: the Type 20 Substation Protector has a ¾-inch air-gap between every terminal point and the metal cover. This provides an additional guard against high potentials.

In the long run you'll find that Sands apparatus gives you *more* protection, *more* economically than any other line of protection equipment. For further information write for Catalog 4068-A.

AUTOMATIC ELECTRIC

ORIGINATORS AND DEVELOPERS OF STRONGER STEP-BY-STEP MACHINE SWITCHING AUTOMATIC DIAL SYSTEMS

MAKERS OF TELEPHONE, SIGNALING AND COMMUNICATION APPARATUS
ELECTRICAL ENGINEERS, DESIGNERS AND CONSULTANTS

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THE PLANT MAN'S NOTEBOOK

BY RAY BLAIN • TECHNICAL EDITOR

SOME telephone men have been concerned over the scarcity of aluminum paint suitable for use in their exchanges. This need no longer cause concern for there is now available alloy silver paint which produces an appearance similar to aluminum and is considered entirely satisfactory. The pigment and vehicle are packed in separate containers so that the two can be mixed together at the time the paint is to be used. This is just another thing about which we worried but later found the answer, and this is typical of telephone men everywhere.

* * *

Cablemen seldom agree as to whether or not desiccant can be used to entirely replace paraffin in cable splicing. Some claim that desiccant is completely suited for new work, but is not in all cases suitable for the clearing of cable trouble. Still others contend that desiccant is suitable for the clearing of dampness, but is not adequate when the cable is soaked. In this connection, the writer at one time enjoyed the privilege of witnessing a demonstration when a cable was thoroughly soaked and then dried with desiccant so that all pairs showed clear on 100,000 ohm voltmeter in about 20 minutes. This would appear that desiccant will do the job; however, we would be glad to have a report on this subject from active cable men in the field.

* * *

Recently I had the pleasure of attending a technical committee meeting where necessary tools required for cable splicing were discussed. It is a peculiar fact that few engineers will agree as to the proper tools to be provided for a cable man. This appears a simple problem on the surface, however, it is extremely important that a splicer be equipped with every necessary tool, but should not be burdened with a large number of tools which will only be used occasionally.

* * *

There is little doubt that men now in the armed forces will learn many things about communication in the field which will result in the improvement of our equipment after victory is won. The proved ideas gained by these men in the field and carried back with them into civil life will have, we predict, a healthy reaction on the communication industry as a whole.

* * *

After the war is won, telephone companies everywhere will undoubtedly make greater use of cable in their plants than at any period in the history of the industry. It is also quite evident that large amounts of one-pair and two-pair cable will be used for distribution to replace drop wire. There is a probability that this small cable will be paper-insulated and someone should be thinking about a small terminal for use without compound or wiping metal and for use either inside or out of doors.

* * *

We had the pleasure recently of meeting H. F. Hadley of the Defiance Alloyed Products Co. and discussing with him the design features of the small portable compressor which supplies moisture-free air for pressure testing of telephone cables. This little machine is certainly a godsend in these times when containers for nitrogen gas are so scarce.

* * *

Ezra Stevens of Boston paid the Signal Corps Plant Engineering Agency a visit while in Philadelphia recently. Ezra is looking fine and from all indications the pressure of war work agrees with him.

* * *

Several of the officers and engineers of the Plant Engineering Agency, Office of the Chief Signal Officer, had the pleasure of hearing Brig. Gen. C. L. Sturdevant, assistant chief of engineers, deliver an address, "Blazing the Alcan Highway" at the Engineers Club in Philadelphia, February 24. This lecture dealt with the construction of the highway and from the views shown we had no difficulty visualizing the problems the Signal Corps encountered in the building of the communication lines.

CHEMICAL AIR DRYERS: Spring is just around the corner and with it comes damp, humid weather in many sections of the country. Excessive moisture is ever a detriment to all central office equipment and its control is most important. This control of moisture is especially necessary at this time when we realize that most of our equipment must last and carry an abnormally heavy load for the duration.

The chemical dehumidifier has for a number of years proved entirely satisfactory for use in telephone exchanges. One type utilizes a small fan to circulate air through the chemical while the other smaller unit has no moving parts. With this type, the chemical is merely

placed in the upper mesh container and exposed to the air—the residue falling into the bottom of the container. These units will absorb moisture equal to 90 per cent of the weight of the chemical.

One or more of these units, depending on climatic conditions and the size of the exchange, will insure moisture protection for delicate central office equipment and prove an investment well worth consideration by any telephone company.

* * *

POCKET OHMMETERS: The accompanying illustration, sent to us by Carl O. Morgan, president, Argos (Ind.) Telephone Co., shows one of the popular

pocket ohmmeters with two additions which make for more convenience for the troubleshooter. A leather strap is attached to the top so it can be hung on the wrist, safety belt or elsewhere, and also a three-volt 10-ohm buzzer

(Please turn to page 33)

"IF THAT TIRE UP THERE IS A 600 X 16, THE BOSS IS GOING TO BE MIGHTY HAPPY ABOUT THIS."

IF THE SUPPLIES YOU REQUIRE BELONG ON THE POLE

Make Graybar your "one-call" source

We can't sell you tires, but there's little else on this or any other pole that you can't get from GRAYBAR... either directly from local stocks, or as promptly from the builders as priorities permit.

Today, there's a real time-saving advantage in dealing with a supplier who knows the ropes from the procurement standpoint. You can "leave it to GRAYBAR" to explore every possibility of rounding up essential supplies without delay. In an emergency, a whole "network" of GRAYBAR offices can be called upon to aid.

Why not make GRAYBAR your "materials mobilizer" for everything from the top of the pole to the bottom of the hole? Just call your local representative.

GraybaR

Everything Electrical .... THAT IT TAKES TO WIN!

IN OVER 80 PRINCIPAL CITIES

Executive Offices: GRAYBAR BUILDING, NEW YORK, N. Y.

"INTERNATIONAL INCIDENT" CREATED

When Anchor Tangles Cables

WHEN A HEAVY anchor is lowered to a slimy river bottom and there, with no apparent effort, proceeds to become all tangled up with several submarine cables, you can be certain that repairing it is no picnic. The accompanying photograph shows what actually happened to three submarine cables of the Michigan Bell Telephone Co. in the Detroit River which gave repairmen a headache.

On the evening of November 19, fog lay heavy over the Detroit River when anchor was dropped by the heavily-laden freighter *Algoway*. Three submarine cables cuddled cozily in the river bottom and all carrying either Detroit-Windsor circuits, or important toll circuits, according to the story in *The Michigan Bell* magazine. With all of the Detroit River available that anchor had to be lowered (accidentally, of course) at the exact spot where these cables crossed the stream. When the fog lifted shortly before 11:00 p.m. and the steamer raised anchor, up with it came a 68-pair cable—and that raised virtually an "international incident" for Detroit and Windsor (Canada) telephone people.

At the same moment lights flashed on the toll boards in Detroit and Windsor as the flow of traffic was cut and calls were disconnected. Traffic employes notified the cable test desk that all toll circuits in the 68-pair Detroit-Windsor cable and some of the circuits in the 530-pair cable were out of service.

It was a comparatively short time later that the dock swarmed with members of the cable-placing crews, splicing crews, engineers and plant supervisors. It was cold and damp and the Bob-Lo steamer, docked nearby, had on its winter tarpaulin and its boilers were cold. It was just a little after midnight, too, and there was business in the air. This was an emergency—a war emergency—and those toll circuits from Chicago and Detroit to Montreal and Toronto, and many others of equal importance must be cleared. The crews and their supervisors and members from plant engineering had gathered to do an emergency repair job.

Immediately gas pressure was placed on both cables at the American side, and on the 530-pair cable at the Canadian side, to prevent water from seeping further into them and causing greater damage.

Within a few hours a barge and tug were located and equipped with machinery and men to reach and repair the damage. (Incidentally barges and tugs on the Detroit River are not floating around idle these days.) But by noon the following day the barge, loaded with telephone men and their equipment, was towed alongside of the freighter. In due time they found that the 68-pair cable had made a figure eight around the anchor (see photograph).

Close-up of what happened when a freighter's anchor snagged not one but three submarine cables in the middle of the Detroit River (Michigan) shortly before midnight last fall. It took seven days and skilled crews of engineers, cable splicers and plant men to repair the damage.

With no more trouble than having the barge break away from its mooring to the freighter—which almost sent the barge's derrick right down to the bottom of the river—the anchor and cable were placed on the barge, the cable was disengaged from the anchor, and the freighter *Algoway* was finally released and went on its way.

Careful examination showed that the cable's armor was not broken, but the cable was in a knot around the other two cables and had been pulled loose from its mooring and severed in the first manhole on the Canadian shore. Where the cable had come in contact with the anchor the insulation was broken.

After three days of work additional troubles confronted the crews. The 530-pair cable failed completely and all calls had to be re-routed over the third cable of 408 pairs which had not been damaged. Replacement cable was secured for the 68-pair cable from the emergency stock in Windsor and with the cooperation of the construction crews of the Bell Telephone Co. of Canada the new cable was placed from the Canadian manhole to the barge. The Canadian Bell splicers completed the splice in the Windsor manhole and Michigan Bell crews completed the one on the barge.

A diver was sent down to determine the extent of damage to all three cables and reported that they were entwined with each other in one spot. Because of the current of the river, he was unsuccessful in attaching a line to the damaged 530-pair cable so it was decided that all three should be raised on the barge to locate the damaged portion. The 530-pair cable was found to be wet a considerable distance on each side of the entanglement. The wet portion was cut out permitting the release of the other cables and they were lowered back into the river. Two hundred and eight feet of the cable were found defective but due to the slack left when it was originally placed in the river only 190 feet of new cable were required for the replacement. This was

secured from an emergency reel in the Detroit warehouse.

The splicing crews worked continuously to complete the random splice on the end toward Detroit. The splice was then placed in the river and the barge moved toward the Canadian shore in order to reach the good cable on the Canadian end. The tagged splice was completed and it was placed in the river.

About noon on the seventh day—Thanksgiving Day, to be exact—many a weary telephone man returned to his home for turkey dinner with the family, thankful indeed that the job was done and all work had been completed.

First Aid Course For Employes

(Concluded from page 15)

victims were jounced and bounced in ambulances as they were hurried to front-line stations and to more remote hospitals.

Recognition of this high mortality rate led to the adoption of the Thomas splint by the armed forces and the formation of squads to apply these splints before the wounded soldiers were moved from where they had fallen. This procedure in the handling of wounded American soldiers has reduced the mortality from fractured legs from its high of 75 per cent to 17 per cent.

This tells us two things that are essential in the immediate care of a fracture—(1) fixation or immobilization and (2) extension or traction. Traction is perhaps the most important care a first aider can give the first 30 minutes following an injury, for it is essential to relieve the pressure of fractured bones on soft tissues and also to relieve and stop the contracting muscles, to reduce the pain and consequently the shock.

I want to repeat that *fixed traction is the ideal method for splinting limbs*, but many times fixed traction cannot be used and in these cases it is necessary to care for fractures without fixed traction. In my next article, which will be Part V, covering transportation, I will also include a discussion on handling fractures without fixed traction.

(To be continued)

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"RELIABLE" DROP WIRE CLAMPS
Now manufactured of galvanized steel.
Reliable ELECTRIC COMPANY
OVER 30 YEARS SERVICE TO THE UTILITIES
3145 CARROLL AVENUE · CHICAGO, ILLINOIS

His work here helps victory there
The telephone lineman plays an important part in this war, even outside the armed forces. Upon him, largely, depend the vital messages for production and distribution flowing back and forth over the telephone lines strung from coast to coast in this country.
Taking care of these lines is a big job. Because it is, it requires good tools. And, "good tools" is just another way of saying
KLEIN TOOLS
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TECHNOLOGY INSTITUTE HAS TELEPHONE COURSE

IN ILLINOIS there has long been a need for a school where men and women could receive basic instruction in telephony. Persons who wished to make a career of telephone work, and also those employed in the industry, were unable to receive complete basic training in the make-up and operation of simple telephone systems.

In the fall of 1942, Dr. Jesse E. Hobson, director of the electrical engineering department of the Illinois Institute of Technology, Chicago, decided the facilities at this school made it the logical place to offer a course in telephony. One of the youngest directors of a department of electrical engineering, Dr. Hobson has been at Illinois Institute of Technology since September 1941. Before this time he was an engineer in the central station department of Westinghouse Electric & Manufacturing Co.

His brilliant educational career was capped by the discovery in 1935-36, while taking his doctorate at the California Institute of Technology, that it is possible to measure high voltages up to and exceeding a million volts by measuring the minute force between spheres charged to this difference of potential. With his background, it was immediately apparent that the new director would try to widen the curriculum in the electrical subjects offered by the Illinois Institute.

Advent of the Engineering Science Management and War Training Course has been a great help in this connection, and at the present time from a "standing start" less than a year ago, 1,200 students are now receiving training in radio and radio mathematics, and 6,300 men have been trained in day and evening courses in radio. Courses offered by the Institute range from those for the high school graduate to the graduate radio engineer and are occupying the entire services of a staff of 52 men under the direct supervision of Prof. Paul G. Andres.

Students in classroom of Illinois Institute of Technology listening to INSTRUCTOR FRANK E. LEE.

As soon as the enthusiastic response of men and women from all walks of life in Chicago had shown that the radio courses were going to be a definite help in the war effort, it was felt that similar courses in related fields should be of value, including telephony.

It was decided that since the course in telephony would be an elementary one (with possibilities of advanced courses at an early date), the only requirements for enrollment would be a high school education which contained a course in science, plus a genuine interest in the study of telephony. Fifty-five students were enrolled for the first course, which began February 23. Classes for the students are held two evenings a week, for a period of 16 weeks.

The complete course includes elementary principles and continues through the essential units of the subscriber station. By means of lectures, movies, apparatus demonstration boards, slide films, and laboratory instruction, students are given a full knowledge of practical telephone work.

One evening a week is spent in the laboratory where the knowledge gained is put to actual test. Simple electrical circuits are studied first, and these circuits are gradually developed into telephone circuits as the course progresses.

Actual circuits are to be built by the students which will duplicate telephone circuits in use in local battery or common battery systems. Lines will be built up with all the characteristics of extended telephone systems. *Special emphasis is placed on careful workmanship, neatness, proper handling of tools, and principles of safety.*

While this course is designed to fill a definite training need as a result of the country's tremendous war effort, it is felt that it will prove of the same value in times of peace.

Before long a number of the students enrolled in this course will be members of the armed forces. It is believed the material covered will aid

MR. LEE (with pencil in hand) explaining operation of testing set to telephone students.

LOVELL NELSON, laboratory instructor (with handset to ear), demonstrating testing equipment to students in Illinois Tech telephone lab.

the students, both men and women, in learning the methods used by the U. S. Army Signal Corps. In this respect special emphasis will be placed on local battery grounded transmission lines.

During these times equipment to carry the messages of a busy nation is difficult to obtain. In view of the circumstances, the laboratory work will be performed with rebuilt parts. However, it is the belief of the course directors that here is a spot where demonstration apparatus and material that might be lying idle in some storage space could be put to work.

This course is, properly enough, being taught by men directly from the telephone industry. Frank E. Lee of Chicago is the lecturer and Lovell Nelson of Chicago will assist in supervising the laboratory work. Mr. Lee and Mr. Nelson have had years of experience in both inside and outside plant work and their practical background is of benefit in training students for service in the communications divisions of the armed forces and for positions with telephone operating and manufacturing organizations after the war.

An outline of the first telephone course of the Illinois Institute of Technology follows:

FIRST WEEK: *Introduction to Telephony.* Necessary units; electric and water circuit analogy; methods of producing electricity; batteries.

SECOND WEEK: *Elementary electricity.* Series and parallel connection. Conductors; resistance; Ohm's Law.

THIRD WEEK: *Telephone transmitter.* Essential parts; rheostat principle; sound waves; carbon conduction of current; voice or modulated currents.

FOURTH WEEK: *Telephone receiver.* Principles of magnetism; permanent magnets; electro-magnets; receiver action.

FIFTH WEEK: *Induction coil.* Electromagnetic induction; primary circuits; secondary circuit; induced talking currents; types of currents. Quiz on first four weeks.

SIXTH WEEK: *Condenser and retardation coil.* Principle of the condenser; variable resistance across condenser; principles of retardation coil; coil discharge; retard coils in series and in parallel.

SEVENTH WEEK: *Instrument circuits.* Principles of transmission; methods of coupling instrument circuits; the sidetone circuit; the anti-sidetone circuit.

EIGHTH WEEK: *Ringers and generators.* Magnet conductor movement; condenser in series with ringers; superimposed pulsating current.

NINTH WEEK: *Circuit and analysis relays.* Schematic drawings; use of relays; types of relays.

TENTH WEEK: *Fault locating (1).* Maintenance of substation lines; types of trouble; analysis of trouble; use of test set. Quiz on fifth through ninth weeks.

ELEVENTH WEEK: *Fault locating (2).* Open circuit troubles; short circuit troubles; line crosses; line grounds.

TWELFTH WEEK: *Fault locating (3).* Substation troubles; anti-sidetone circuit troubles; cords, coils, and switchhook troubles.

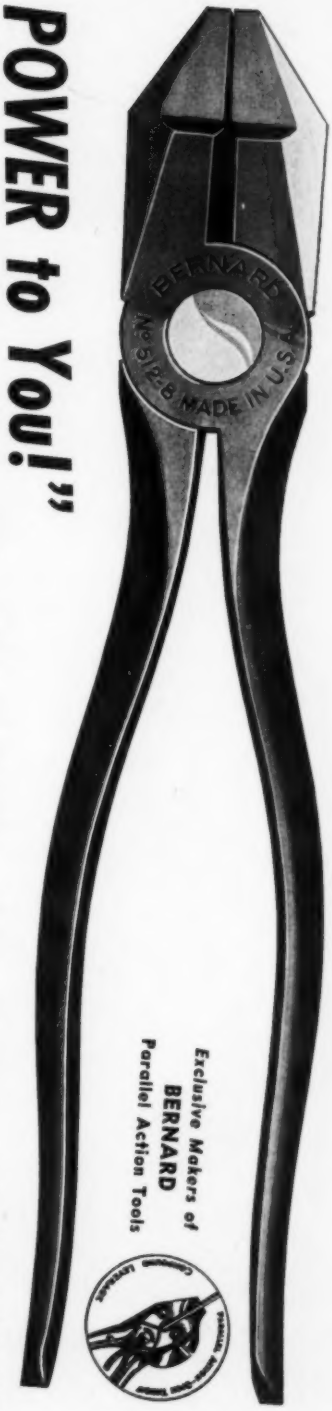
THIRTEENTH WEEK: *Line protection.* Need for protection; sources of high voltage hazards. Atmospheric electricity. Low frequency induction. Basic protective elements. Open space cutout. Heat coil.

FOURTEENTH WEEK: *Cross talk.* Cable construction; transposition; induction between adjacent wires; loading coils.

FIFTEENTH WEEK: *Proper use of tools.* Hand tool hazards; safe methods; job planning.

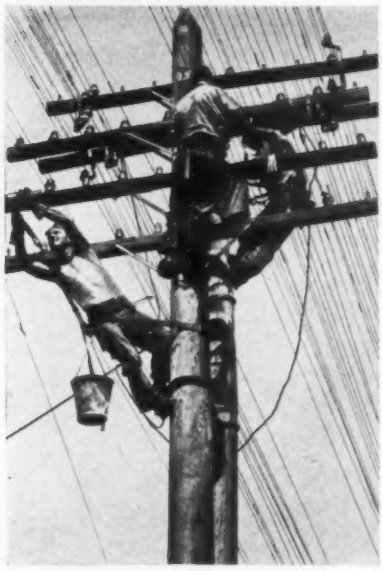
SIXTEENTH WEEK: *Review.* Review and final examination.

BERNARD
Lineman's
PLIERS
Give
"More POWER to You!"
THE WM. SCHOLLHORN COMPANY, TELEPHONE TOOL DIVISION, NEW HAVEN, CONNECTICUT



Exclusive Makers of
BERNARD
Parallel Action Tools

Crapo
HIGH-TENSILE
LOW-RESISTANCE
LINE WIRE



Skillful Maintenance Vital to War Effort

● Keeping communication lines at top efficiency demands constant vigilance and skillful maintenance in these crucial times. By careful planning and judicious use of available materials, telephone companies are doing a great job in maintaining vital service.

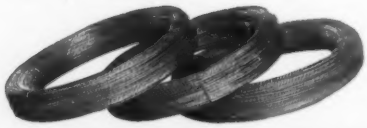
● Where open wire circuits are involved, the industry specifies *Crapo* High-Tensile Line Wire for repairs and replacements and for essential new long-span construction. The rugged strength of these revolutionary wires provides that extra factor of safety which minimizes the possibility of breaks, saves man-hours and materials.

● *Crapo* HTL-85, with 60% greater tensile strength than standard B.B. wire, permits spans to 225 feet in heavy loading districts; provides stronger, safer spans in existing lines. *Crapo* HTL-135, with two and one-half times the strength of B.B., makes possible spans of 350 feet under heavy loading conditions.

Write for Bulletins 201 and 202!

• • •

Ask the distributor of *Crapo* Galva-Products!



INDIANA STEEL & WIRE CO.
MUNCIE, INDIANA

Telephone Time Signal Used In Rochester, N. Y.

Automatic attention-callers soon will remind longwinded telephone talkers in Rochester, N. Y., of the swift passage of time.

A new signal apparatus just completed by the Rochester Telephone Corp. will remind telephone users to obey a wartime request and keep their conversations brief. Resembling the tone of radioed time signals, it will sound at three minute intervals. The equipment, according to John P. Boylan, president of the telephone company, is the first of its kind to be used on a large scale in telephone exchanges in the United States.

Announcing the innovation, Mr. Boylan said:

"The government has urged telephone companies and subscribers to aid in keeping telephone facilities open for rapid transmission of important war calls. It has been suggested officially that all telephone users try to limit their conversations to three minutes, thus relieving overcrowded lines."

A company advertisement in local newspapers explains that the first signal does not necessarily mean three minutes have elapsed since the conversation started. The second signal, however, will indicate that this period has sped by since the first signal started.

In developing and installing the signal apparatus, Mr. Boylan said company engineers had to use and adapt old material for the wiring, and cables were taken apart for wire connections. The new phase of telephone service was said to have attracted the attention of government officials who have requested a report on the time warning apparatus.

NOW A NEW SIGNAL WARNS TELEPHONE USERS:
"Limit conversation to 3 minutes!"
I'D BETTER SIGN OFF NOW, HENRY— WE CAN GO OVER THE REST AT THE MEETING
BEEP!
Subscribers who make telephone calls thru the Glenwood Exchange will hear a new signal on and after March 1. It will be an automatic signal that will be heard at 3 minute intervals. Its purpose is to aid telephone users to keep their conversations brief.
The high pitched tone of this signal will be similar to radio time signals. When the first signal is heard, it does not necessarily mean that 3 minutes have elapsed since conversation started but the second signal will indicate that 3 minutes have elapsed since hearing the first signal. Repeated signals will be heard at 3 minute intervals.
This signal is being installed by the Rochester Telephone Corporation to help everyone comply with Government requests to keep conversations brief so that official war calls will not be delayed. Similar apparatus will be installed in other exchanges as soon as possible.
ROCHESTER TELEPHONE CORPORATION

A newspaper advertisement used by Rochester (N. Y.) Telephone Corp. to inform public of new time warning signal.

Answers to Traffic Questions on Page 24

1. If Long Distance does not signal you on the cord on which you are holding the trunk and asks you to ring the number or to release the trunk and the line within 15 minutes from the time she ordered them held, reach her, ask whether she wishes to have the trunk and the line held longer, and proceed as directed.

2. Cut in and answer, "Operator." If the customer wishes to make a local call, say, for example, "This line is being held to complete a long distance call." If he still wishes the local call, establish the connection. Then ring on the trunk on which you are holding long distance and tell her that the line has been released.

If the customer wishes to be connected with long distance again, ring on the trunk on which you are holding long distance, tell her that the calling number is calling, and connect the cords.

3. Give a busy report.

4. If the charge has been accepted, in announcing ready on the call the toll center operator should say, "WH OK collect. Do not time."

5. Please refer to preface for the answer.

The Plant Man's Notebook

(Continued from page 27)

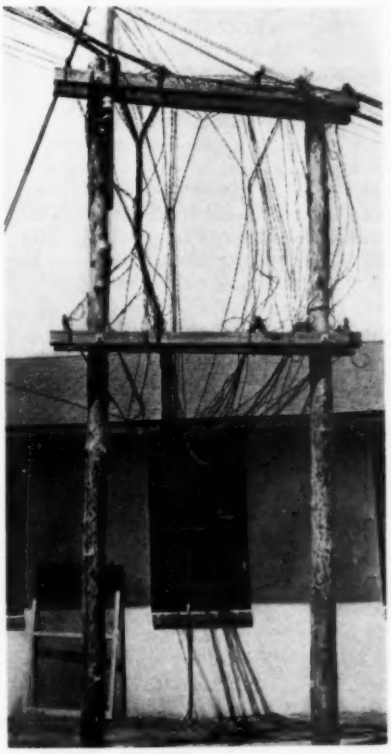
with an auxiliary switch for testing fuses and short-circuits where it is not necessary to know the value of the test.

This buzzer works off the same test cords but uses the auxiliary switch and it is not necessary to have the meter in position so one can read the dial. It can be left hanging on the belt or in some convenient place and saves a lot of inconvenience, particularly in cold weather. If you have trouble in locating a buzzer of this type Mr. Morgan suggests Edwards Lungen Buzzer No. 15, Size 0—three-volt D.C.—55621.

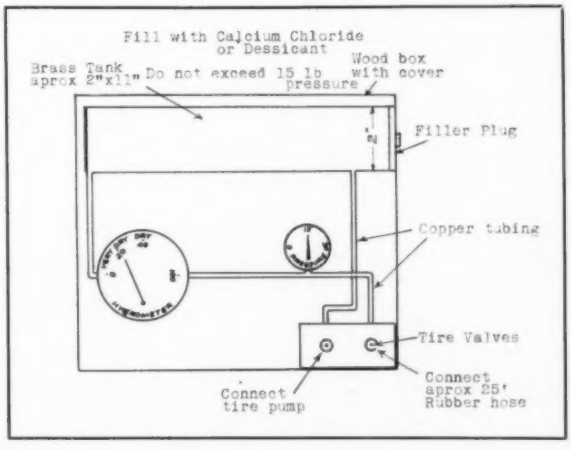
* * *

FLASH TESTING OF CABLE: An interesting letter was recently received from A. O. Lindle, division plant superintendent of the Tri-County Telephone Co., South Haven, Mich., in which he describes a method used by his company to flash test cable splices using a common tire pump of the hand-operated variety. The arrangement by which this simple system is used is explained in the accompanying sketch. The pressure should not exceed 15 pounds at any time and the chloride or desiccant should be changed when the hygrometer reads above 40 per cent. The hygrometer may be dispensed with when colored desiccant is used. The change in color will indicate the moisture content of the chemical. Mr. Lindle states that he has used this system for over 15 years for the flash testing of cable with complete success.

We hope to have an arrangement of this nature—but one which utilizes a small power-operated compressor — to tell you about in the near future.



DROP WIRE IN EMERGENCY: The above picture indicates how drop wire was used in one Army camp to provide emergency communication and a distribution system for a temporary telephone exchange. When communication must be provided with great speed, drop wire always comes to the rescue. This was likewise true during World War I as well as in the present conflict. In peace as in war, drop wire never fails in an emergency as it is always used in large quantities to restore service quickly in any disaster which destroys the permanent communication lines.



Pressure set for flash testing using hand tire pump.

A "Little Fellow"

23D

But a Tireless Public Servant

This compact Gray Postpayment Pay Station, mountable on wall or shelf, will fit innumerable places unsuitable for larger equipment, hence go a long way toward relieving the war shortage of private telephones.

As it requires no extra central office equipment, and you can use your own transmitters and receivers, it offers an easy way to get into the pay station business. 23D is not only the answer to the war emergency, but, as hand-set can later be substituted, it is a long-term investment that will always pay regular income.

Please give type of transmitter you will use. If desired, we will mount transmitter and receiver for an installation and testing charge of 50c.

AUTHORIZED AGENTS:

American Automatic Electric Sales Co.
Graybar Electric Company
Kellogg Switchboard & Supply Company
Leich Sales Corporation
The North Electric Mfg. Company
Stromberg-Carlson Telephone Manufacturing Company
Canadian Telephone & Supplies, Limited
Northern Electric Co., Limited

THE GRAY MFG.CO.

HARTFORD, CONN.

Commissions And Courts

(Continued from page 22)

islation, gross earnings, taxes, net income taxes and taxes paid on toll service income by telephone and telegraph companies would be distributed directly to the various communities instead of being paid to the state.

Communities would be required to use the funds to reduce levy indebtedness or, if there were no debt, to cut the general property tax.

V V

California Commission Orders Separations Inquiry

On March 9 the California Railroad Commission on its own motion instituted an investigation of the Pacific Telephone & Telegraph Co. and the Southern California Telephone Co. and connecting telephone companies in the state of California with particular reference to the determination of whether the commission should prescribe a basis for the segregation of their properties, revenues and expenses in connection with exchange and toll intrastate communications as distinguished from interstate and foreign communications.

The investigation is also to determine whether the station-to-station or board-to-board basis should be declared a reasonable and proper basis for the making of such segregations, and to prescribe the method of determining the property of the telephone companies and the connecting companies that shall be considered in the separation of exchange and toll intrastate services, as distinguished from interstate and foreign communication services, and the revenues and expenses that shall be associated with such services.

The commission has set March 26 as the date for the hearing on the case.

V V

Advanced Rates Scheduled for Norman and Heartwell, Neb.

The Kearney County (Neb.) Independent Telephone Co. has been authorized by the Nebraska State Railway Commission to increase rates 25 cents a month. Its present schedule calls for $1.00 a month from subscribers who own their own instruments and $1.25 where these are company-owned. The company has the same rate for all types of service. It serves 288 subscribers from exchanges at Norman and Heartwell, of which 237 are rural.

The company has an investment of $17,224, earning 1.55 per cent on that last year, the commission finds. Revenues were $5,535.07 and expenses $5,268.38, leaving a net from operation of $266.69. The company presented evidence showing that it would have to add $530 to its payroll for the current year and that all extra help cost more.

The commission found, without a detailed investigation, that revenues were inadequate for proper operation.

V V

Awarded Back Pay and Costs In Colchester (Ill.) Case

The lawsuit of Anvernette Burton against the Colchester (Ill.) Farmers' Telephone Co. filed in federal court in Peoria, Ill., November 25, 1942, was dismissed March 4 on motion of the plaintiff, it being stipulated that she be paid back wages and court costs amounting to $547.57. The proceeding was filed under the fair labor standards act of 1938.

The litigation involved the plaintiff's work for the telephone company from

ELIMINATE *Dampness, Excess Moisture in Cables, Coils, Relays with*

WATER-SORBER

Protects switchboards and control rooms from excess moisture. Keeps cables, protector coils and cut-off relays trouble-free. Prevents voltage leakage.

Water-Sorber units are compact, handy dehumidifiers. Require no care except occasional refill of chemical. Used by telephone exchanges throughout the country.

MOTOR-DRIVEN, CIRCULATING UNIT.

Model No. 2 →

WATER-SORBERS ARE AVAILABLE IN DIFFERENT SIZES AND MODELS. WRITE FOR DESCRIPTIVE FOLDER T.

THE GENERAL AIR CONDITIONING CORP.
4415 APPLETON STREET
CINCINNATI, OHIO

Use of Vacuum Tubes in Telephone Work Is Increasing. Learn About Them From

FUNDAMENTAL ELECTRONICS AND VACUUM TUBES

By ARTHUR L. ALBERT
Professor of Communication Engineering, Oregon State College

Discusses the principles of electronics and the theory of vacuum tubes, photocells and copper-oxide varistors in radio and in telephone circuits. Stresses both the theory of these devices and the design and operation of circuits in which they are used. The book is non-mathematical and of practical value to those in engineering and operating branches of telephony.

422 Pages — 6 by 9 in. — $4.50

TELEPHONY PUBLISHING CORPORATION
608 S. Dearborn St., Chicago
WABash 2435

October 24, 1938, to April 13, 1942, during which time she claimed she was frequently required to work periods of 24 hours without extra pay. She was paid 15 cents an hour for her services, she stated in her complaint when the minimum wage permitted by law was 25 cents an hour.

The judgment awarded her through the compromise provides for reimbursement of the court costs she had incurred, for attorney fees and for back pay of $311.26.

V V

Authorizes Sale of Company At Mt. Auburn, Ill.

Purchase of the Mt. Auburn (Ill.) Telephone Co. for $5,600 by the Illinois Consolidated Telephone Co., with main offices in Mattoon, from Kate R. Morris, Mt. Auburn, was approved March 1 by the Illinois Commerce Commission.

The transfer is effective as of January 1, and rates are unchanged by the commission order. The commission set the reproduction cost of the property at $26,283 and the depreciated cost at $18,263.

V V

Reduced Rates Scheduled For Westwego, La.

Submarine cable charges made to telephone users in Westwego, La., and west bank sections in that vicinity have been eliminated, Commissioner Nat Knight of the Louisiana Public Service Commission announced March 6.

The removal of the charge followed several conferences with officials of the Southern Bell Telephone & Telegraph Co. and constitutes an immediate reduction in monthly bills in these areas by $2.00 to commercial and business users; $1.00 to one- and two-party customers and 50 cents to four-party users.

V V

Summary of Commission Hearings and Rulings

Federal Communications Commission

March 1: American Telephone & Telegraph Co. granted authority to file on not less than one day's notice revisions in pages 27B, 27C, 27D and 27E of its Tariff FCC No. 132, in order to put in force, effective March 15, reductions in overtime rates for two-point message toll telephone service between points in the U. S. and points in Canada in connection with which schedule II applies.

March 2: Relative to the case of the Northwestern Bell Telephone Co., in the matter of increased charges for interstate telephone exchange service in Iowa, the FCC adopted an order continuing until further order of the commission the hearing in Docket 6336 now scheduled for March 18, and postponing indefinitely the effectiveness of the increased charges.

Illinois Commerce Commission

March 17: Hearing in Springfield on complaint filed by village board of Varna vs. Varna Telephone Co. as to telephone service in that town.

COMING TELEPHONE MEETINGS

Texas Telephone Association, Baker Hotel, Dallas, March 22 and 23.

Kansas Telephone Association, Jayhawk Hotel, Topeka, March 25 and 26.

Nebraska Telephone Association, Hotel Lincoln, Lincoln, April 13 and 14.

Iowa Independent Telephone Association, Hotel Fort Des Moines, Des Moines, April 15 and 16.

Illinois Telephone Association, Hotel Knickerbocker, Chicago, April 20 and 21.

United States Independent Telephone Association, Executives' Spring Conference, Edgewater Beach Hotel, Chicago, April 22 and 23.

Ohio Independent Telephone Association, Deshler-Wallick Hotel, Columbus, April 27 and 28.

Indiana Telephone Association, Claypool Hotel, Indianapolis, May 5.

Pennsylvania Independent Telephone Association, Webster Hall Hotel, Pittsburgh, May 13 and 14.

Wisconsin State Telephone Association, Park Hotel, Madison, May 19 and 20.

New York State Telephone Association, Hotel Syracuse, Syracuse, May 26 and 27.

Oregon Independent Telephone Association and Washington Independent Telephone Association, Joint Convention in Spokane, Wash., June 18 and 19 (hotel to be announced later).

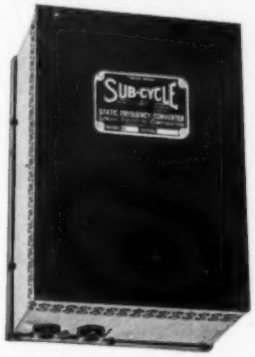
California Independent Telephone Association, Miramar Hotel, Santa Monica, June 24 and 25.

QUIET!

THAT'S

SUB-CYCLE

"MASTER"
RINGING CONVERTER



Subcycle Ringing Converters are designed for use on 105-125 volt 60 cycle A.C. Supply i.e. Regular Lighting Power.

Consider the following advantages offered by Subcycle to meet your requirements:

- *No Moving Parts—Nothing to Adjust*
- *Provides Ample Power*
- *Requires No Routine Maintenance*
- *Output Voltage Regulation between no load and full load is very close*
- *Cannot Interfere with Radio Reception*
- *Quiet*

Subcycles are now available in many sizes to meet the requirements of all size exchanges including P.B.X. service. Pulsators are also available.

We carry Subcycles in stock for immediate shipment to you. Write for further information.

Sold by

BUCKEYE
TELEPHONE & SUPPLY CO.
COLUMBUS, OHIO

May 4-5: Hearing continued on petition filed by Illinois Telephone Co. for authority to increase rates for telephone service in Jacksonville, and 16 neighboring communities which are as follows: Carrollton, Alexander, Bluffs, Greenfield, Hillview, Lighterberry, Manchester, Murrayville, Meredosia, New Berlin, Patterson, Pleasant Plains, Roodhouse, White Hall, Winchester and Woodson.

Missouri Public Service Commission

March 4: Conference held in Jefferson City by officers of the Southwestern Bell Telephone Co. and representatives of St. Louis and other cities as to whether the six-year-old proceeding to fix the valuation of the telephone company property in Missouri should be set for hearing or postponed for the duration of the war. The decision will be deferred, according to Commission Chairman Frederick Stueck, until after the final audit of the commission accountants is filed and all parties to the case are given an opportunity to file suggestions.

V V

Cheers Fire Victims

ERBIE CAMPER is the Florence Nightingale of the Illinois Bell Telephone Co.'s Beverly office at Chicago, Ill. For a week following the tragic fire at a Beverly bowling alley, she devoted her time to hospital duty, administering first aid and cheer to the victims of the fire.

Specialists in all Types

Telephone Wire

Drop — Duct — Tree
Inside—Bridle—Jumper

Also

"Plastite" Insulation

WHITNEY BLAKE CO.
NEW HAVEN, CONN.
Distributed by Graybar

OPERATORS DEVOTE SPARE TIME TO WAR ACTIVITIES

By THELMA VERNER

THE TELEPHONE operator in the mountain resort of Asheville, N. C., is now a far cry from the gum-chewing Gertie with the twangy voice one has seen in the movies, or inwardly abused when we did not get the right number.

Girls come and go all hours of the day and night at the telephone building. There are no "swing shifts" but the work in the central office, like war activities, is continuous.

The Telephone Women's Club, of about 200 members, carries on the war work, and among these are 36 whose husbands are in the armed services. These war wives give the club an earnestness of purpose and reality it might not otherwise have gained in so short a time.

The club is not only busy in war work but in civic activities, charities, the Red Cross, home-making, drama, physical culture, and a number of things, the variety and scope of which top nearly all other groups of its size in Asheville.

To show that the girls are serious in their activities, although a lot of it is highly stimulating and great fun, they rate 100 per cent on the 10 per cent deduction list in buying bonds.

One hundred and fourteen young women have been trained in first aid. A large number have taken the advanced course, as well as home nursing. Many are knitting for local hospitals as well as making surgical dressings. They have made 50 bedside bags to be distributed among patients at Moore's Hospital. This is a nearby government hospital which has just been completed, and only a few weeks ago received its first patients. The girls are also collecting woolen scraps to be used in this hospital and others.

The girls are very active in entertainment for service men, both able and disabled. Hubert Hayes, of the local fire department, who once had a play on Broadway for a few weeks, is dramatic director. He has other creative work to his credit, and has had experience in directing. His group provides amateur theatricals in hospitals. Added to this is a lively marionette group and a chorus division of 20 persons who assist in entertainments.

Members of the club were active in the Victory Book campaign and in the drive for discarded hose to be contributed to the War Production Board.

With all this and more, the club members do not neglect their physical fitness. There is a special committee to see that this phase is taken care of. A general study group planned to take up the discussion of "Famous Women," but later decided to let the discussions, in open forum style, expand into proposed peace plans to follow the war.

It is surprising in how many activities this group of young women participate, in addition to regular duties. It is attributed, to a great extent, to good leadership and enthusiasm.

In all probability, there is not an hour, day or night that some phase of their activity is not furthered. And that's a unique record for any group of girls—or men either.

V V

Minnesota Association Issues Priority Procedure Pamphlet

As an aid to smaller rural telephone companies and switch-line companies in Minnesota seeking priority assistance, the Minnesota Telephone Association has prepared a pamphlet containing information on how to secure maintenance materials, dry batteries and parts for repairs of telephone equipment, in accordance with priority regulations of the War Production Board.

The folder gives the proper procedure to be followed in obtaining materials from telephone manufacturers and suppliers and from operating companies, includes a sample order for these materials, and gives suggestions for maintaining farm lines. Such information should prove of great benefit to the smaller companies and it may be of assistance to other state associations in disseminating similar data.

V V

Named to Bank Post

C. L. JONES, general manager of the Athens (Ohio) Home Telephone Co., was recently elected vice president and a member of the board of directors of the Security Savings Bank of Athens.

John S. Wright Elected I. T. & T. Vice President

The election of John S. Wright as a vice president of International Telephone & Telegraph Corp. was announced March 8, following action of the board of directors. Mr. Wright has been vice president of International Standard Electric Corp., which controls most of I. T. & T.'s manufacturing properties outside the United States, an office he will retain.

Mr. Wright has been associated with International Standard Electric and its predecessors for 37 years. Most of his service has been in executive posts in the European divisions of the company. In 1910 he became assistant manager of the Bell Telephone Manufacturing Co. in Antwerp, Belgium, and later became manager of Le Materiel Telephonique in Paris; in 1919 he returned to Antwerp as managing director of the Bell Telephone Manufacturing Co.

In 1926 Mr. Wright returned to Paris as European continental manager of International Standard Electric, later was made regional vice president of the company for Holland, Belgium, France, Switzerland, Spain and Portugal. He has been in the company's New York offices since 1941.

JOHN S. WRIGHT

Mr. Wright was born in Waddington, N. Y. He is a graduate of the University of Vermont, and is a member of the Sigma Phi Fraternity.

V V

Emergency Call

A police station switchboard operator in Ft. Wayne, Ind., hearing unintelligible screams on an incoming call, dispatched a patrol squad to investigate. Mrs. Jessie Hake explained that her baby had upset the telephone stand, inadvertently dialed police "emergency" and "screamed bloody murder."

dependable
Cedar Poles
MICHIGAN POLE & TIE CO.
NEWBERRY—GRAND RAPIDS
MICHIGAN

POLES

B. J. Carney & Co., 100 N. 7th St., Minneapolis, Minn.—Western red cedar poles. Pentrex Butt Treated or Plain.

C. M. Christiansen Co., Phelps, Wis.—Northern White Cedar Poles, plain or butt treated. Quotations on request.

International Creosoting and Construction Co., Galveston, Texas.—Creosoted Southern Yellow Pine Poles. Plants: Beaumont and Texarkana, Texas.

MacGillis & Gibbs Company, Milwaukee, Wis.—Northern White and Western Red Cedar Poles. Plain or butt-treated. Immediate quotations on request.

T. M. Partridge Lumber Co., Minneapolis, Minn.—Northern White—Western Red Cedar Poles. Plain or butt-treated.

Pensacola Creosoting Company, Pensacola, Fla.—Creosoted Southern Pine Poles of Superior Long Leaf Quality.

Valentine Clark Corporation, 2516 Doswell Ave., St. Paul, Minn.—Finished Cedar Poles. Plain or butt-treated.

LOOMIS
ADVERTISING CO.

A SALES ORGANIZATION *Exclusively..*
That Has Never Failed to Produce More Net Revenue (All Costs Considered) for Telephone Companies Served.
IF INTERESTED in more net telephone directory revenue write or call at our expense.
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Telephone Bldg., Kansas City, Mo.
Citizens Trust Bldg., Fort Wayne, Ind.
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Creosoting Co., Inc., 17 Battery Pl., N. Y. C.
Creosoted Pine Poles
Crossarms . . Conduit
PLANTS AND OFFICES:
New Orleans, La. Jackson, Tenn. Boston, Mass.
Winnfield, La. Louisville, Miss. New York, N. Y.
Norfolk, Va. Savannah, Ga. Philadelphia, Pa.
Annapolis, Md. Chicago, Ill.

TELEPHONE DIRECTORY ADVERTISING
L. M. BERRY & CO.
Write or Telephone for Proposition
TELEPHONE L.D. 16
TELEPHONE BLDG., DAYTON, OHIO

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Appraisals and Continuous Property Records, Original Cost, Depreciation, and Rate Studies
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Electrical and Mechanical ENGINEERS
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Specialists in Appraisals, Rate Surveys, Financial Investigations, Organization, and Operation of Telephone Companies
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CLASSIFIED SECTION

Rates 10 cents per word payable in advance. Minimum charge $2.00 for 20 words or less.

MASTER LIGHTS

ONE OF 70

EMERGENCY LIGHTS

for

SWITCHBOARDS
•
CONTROL ROOMS
•
REPAIR CARS
•
REPAIR CREWS
•
A MASTER-LIGHT FOR EVERY NEED

CARPENTER MFG. CO.

"MASTER-LIGHT MAKERS"

Sidney St. Cambridge, Mass.

HELP WANTED

HELP WANTED: Experienced combination men to install and maintain magneto, common battery and automatic (North) service. Prefer men not subject to draft. This company operates 27 exchanges in central Florida. Employment permanent if work performed satisfactory. Write Box No. 9149, c/o TELEPHONY, stating age, dependents, past experience, salary expected, etc.

HELP WANTED: Permanent position with company in Texas for inside and outside plant maintenance man. C. B. exchanges and toll lines. Top salary and excellent future for man with ability, experience and plenty on the ball. Draft deferment assured account Government contracts. Give complete information in first letter. Write Box No. 9151, care of TELEPHONY.

POSITION WANTED

POSITION WANTED: Telephone Engineer desires position with Class A or B Independent company. Experienced in construction supervision, maintenance and appraisal. Exceptional references. Write Box No. 9154, c/o TELEPHONY.

HELP WANTED

WANTED: Company in Ohio wants Wire Chief for permanent position. Must be familiar with automatic equipment and capable of supervising all plant activities, covering three exchanges and 5,000 stations. Give age, experience and training in first letter. Write Box No. 9155, c/o TELEPHONY.

FOR SALE

FOR SALE: Full reels of new Western Electric cable as follows:

1600 ft. 1 reel 202 pairs 22 ga.
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Western Elec. No. 329 or Kellogg L. B. Transmitters complete with back @	1.10
Western Elec. No. 20 desk stand with 3-bar 1000-1600 or 2500 ohm ringer inside connection signal set $10.50—4-bar $11.25—5-bar @	12.00
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Western Elec. No. 46 Ind. Coils 50c ea. No. 20 35c ea. Kellogg No. 79 45c ea. Kellogg No. 51 35c ea.	
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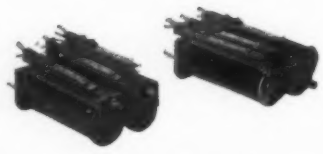

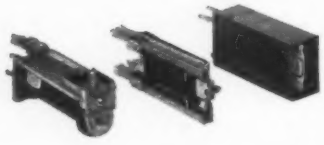

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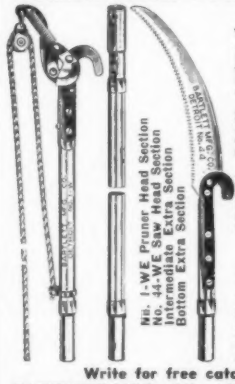
BARTLETT No. 1-WE Combination Pruner & Saw



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Length	Weight
30 in. Pruner	2¾ lbs.
30 in. Saw	1½ lbs.
48 in. Section	1½ lbs.
48 in. Section	1¼ lbs.
Total Weight	7 lbs.

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